1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6

line passed around them. The package is then laid in the bed of some running stream, with a heavy stone placed over it, to prevent its being swept away. After it has remained for two or three days in this state, it is drawn out, and exposed, for a short time, to the action of the air, every distinct piece being attentively inspected, with a view of ascertaining whether it has yet been sufficiently affected by the operation. This is repeated again and again, until the desired result is obtained.

When the substance is in a proper state for the next process, it betrays evidences of incipient decomposition; the fibres are relaxed and softened, and rendered perfectly malleable. The different strips are now extended, one by one, in successive layers, upon some smooth surface—generally the prostrate trunk of a cocoanut tree—and the heap thus formed is subjected, at every new increase, to a moderate beating, with a sort of wooden mallet, leisurely applied. The mallet is made of a hard heavy wood resembling ebony, is about twelve inches in length, and perhaps two in breadth, with a rounded handle at one end, and in shape is the exact counterpart of one of our four-sided razor-strops. The flat surfaces of the implement are marked with shallow parallel indentations, varying in depth on the different sides, so as to be adapted to the several stages of the operation. These marks produce the corduroy sort of stripes discernible in the tappa in its finished state. After being beaten in the manner I have described, the material soon becomes blended in one mass, which moistened occasionally with water, is at intervals hammered out, by a kind of gold-beating process, to any degree of thinness required. In this way the cloth is easily made to vary in strength and thickness, so as to suit the numerous purposes to which it is applied.

When the operation last described has been concluded, the new-made tappa is spread out on the grass to bleach and dry, and soon comes of a dazzling whiteness. Sometimes, in the first stages of the manufacture, the substance is impregnated with a vegetable juice, which gives it a permanent color. A rich brown and a bright yellow are occasionally seen, but the simple taste of the Typee people inclines them to prefer the natural tint.

The types of dress for which bark cloth was used are described in the section on Dress and Personal Adornment.

Mat-Making

Mat making (*u'u moena*) was also an industry to which women devoted themselves. The pandanus mats for the bed-space, and the coconut mat used for thatching and for padding the bed-space were made by individuals or by groups of women, usually relatives, or in the family of chiefs by women who were known to be skilled in the art, who were summoned for the purpose. Thus, if a chiefess desired to have mats made she would summon a group of women whom, during the time of their labor, she would feed and house in a special shelter (*oho au*) built for the work. For fine mats the pandanus leaves were split into small strips (*henu*) with a small stick like a needle (*ake*). (See The Family.)

Other Home Industries

Basket-making was also a function of women, but it was an industry that was little developed and was practiced merely as an incidental house-

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6

285 hold occupation in the Marquesas. The only baskets used were made of coconut leaf. *Kete* was a general term for bakets; Dordillon (8) gives also *hi'e hi'e* and *puru* [Tahitian, probably] as the term used for a small basket made of coconut leaves.

322 Other minor industries, which occupied the spare time of natives at home, were the making of bowls, weapons, implements, and ornaments, and the decoration of them by carving. Experts (*tuhuna*) who were skilled at these industries devoted themselves to them as professions. But families depended mostly on those in the household who were apt at such work. The work was always done on or under the sacred stone house (*fata'a*), which was *tapu*. A full description of the processes and products of these industries will be found in Linton's study of the material culture (20).

FISHING

226 463 All the professional fishermen were called *ava-ika*. Such professionals did not go to war, hence they were little honored in the tribe. The chief fisherman who directed operations and performed the ceremonial was known by several titles, *tuhuna ava-ika*, *ava-ika ke'i* (*ke'i*, great), *ava-ika nui* (*nui*, great). The natives of Atu Ona say that the fishermen in the old days lived continuously in the fishing precincts, but informants elsewhere say that the fisherman dwelt there only at the times of fishing—a statement that seems more likely to be true.

226 778 Fishermen's sacred precincts (*taha tapu na te ava-ika*) belonging to the larger tribal units were found in all sections of the group. They were, of course, always near the sea at some good landing place, which meant usually a beach. In some places the fishermen lived in a single house on a large platform. My information is that at Atu Ona the sleeping houses were small huts elevated on posts, the fishermen sleeping four in a house. Mr. Linton was told that the houses themselves were on the ground, but that the beds in which the fishermen slept were on posts. As to whether the precincts were marked off by any permanent enclosing fence or wall, I have no information, but I doubt it for the reason that mention of such never came out in discussion of these places, and because permanent enclosing fences or walls around restricted areas seem not to have been common in the Marquesas. Every such sacred precinct was named[7]. Thus the sacred places at both Ta'a Oa and Pua Ma'u, on Hiva Oa, were named Mahia. This seems to be not a general term, but a matter of coincidence. Besides the sleeping places for the fishermen and their cook house, there were also in the precincts sheds for the canoes, a house for the nets and

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[7] The names of a number of these sacred precincts in the Marquesas will be published in a subsequent paper.

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brief description of the manner of propulsion applies perfectly to the Tongan method of sculling large craft. It would be practically impossible to build a boat six feet wide and of the same depth on the lines of the built up canoes already described, and it seems certain that these boats were made either of planks or of many pieces. Plank canoes were used in the Society and Tuamoto groups and the Marquesans could hardly have been ignorant of this form of boat. 501

In a legend of the migration of one of the tribes of Hiva Oa, which was driven out by its neighbors and went to seek new land, it is stated that they departed on large bamboo rafts. The tribe in question lived on the plateau and were said to have used these craft because they had no wood suitable for canoes. No details as to the construction could be obtained. [824]

Porter (49, p. 103) says:

"[The natives] use also occasionally a kind of catamaran, which they construct in a few minutes, and a kind of surf board. . . . These, however, scarcely deserve to be enumerated among their vessels, as they are used chiefly by the boys and girls, and are intended solely for paddling about the harbor."

SAILS

The aboriginal type of sail became obsolete at an early date and it is doubtful whether any of the living natives have seen a genuine ancient sail. Informants insisted that they were like those in use at the present time except that the boom sloped upward instead of being horizontal and that the sail itself was made of coconut mats instead of canvas (pandanus mats were tapu for sails). This agrees perfectly with the brief mention of Porter and the picture given by Cook. Porter (49, pp. 102-103) says: 501 205 [824]

Double canoes '. . . are furnished with a triangular sail made of mat, similar to that called a shoulder-of-mutton sail but placed in an inverted position, the hypothenuse forming the foot of the sail, to which is secured a boom.

The drawing published by Cook (14, p. 307) shows a single canoe provided with a mast of rough timber and a triangular sail of matting along the lower edge of which there is a boom also of rough timber. The boom is set at an angle of about forty-five degrees, the apex of the triangular sail being at the juncture of the boom and mast. The upper edge of the sail is concave, and the tips of the mast and boom project for some distance beyond the fabric of the sail. The mast is stayed by a rope running from a little below the masthead to the center of the bow projection, and by three other ropes two of which run to the stern outrigger crosspiece a short distance outside the gunwales of the canoe, while the third is attached to the crosspiece near its outer tip. In the picture the sail is directly over the canoe, between the two inner stays, a system impossible in practice. It seems probable that the author placed it in this position in order to better show

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

501 the arrangement of the stays. A slack line is shown running from the outer end
285 of the boom to the stern seat to control the sheet. In the drawing the lower end of the boom is concealed, but it seems probable that, as in the modern sail, it was not attached to the mast. In the background of the picture there are two small distant canoes one of which is shown under way with the sheet paid out. The side stays are fastened to the bow instead of to the stern outrigger crosspiece, while the bow stay is replaced by a single stern stay. The second canoe is shown with the sail furled, apparently by bringing the boom up against the mast. The method of stepping the masts of the ancient canoes was not ascertained. According to information obtained by Handy, a square rail was used, with a spar at the top and bottom.

PADDLES

501 Porter's mention of "paddles more resembling an oar" (49, p. 152) would imply that more than one type of paddle was in use in the Marquesas, but all the specimens seen or described by informants belong to a single well defined type.

[824] The paddles were made of rose wood, and were often decorated with carving. The manufacture of small highly ornamented paddles of somewhat degenerate form intended for sale as curios has continued until the present time, but the natives have lost the skill necessary for the manufacture of the large genuine specimens; the only ones seen in actual use were old.

The peculiar shape of Marquesan paddles makes them easily recognizable in any collection. (See Pl. XLIII, *B*.) In length they range from 4 feet, 8 inches to 5 feet, 8 inches, although the steering paddles used on war canoes were probably still longer. The average length is slightly over 5 feet. For convenience in description they may be divided into three parts, the shaft, the blade, and the terminal knob, a projection below the blade.

The shaft is approximately circular in cross section and tapers very slightly toward the upper and lower ends. In some old specimens the central part is somewhat flattened laterally, but this may be due to long use. The upper end terminates in a cylindrical knob, slightly thicker than the shaft, or in a flat expanded transverse grip with a concave upper surface. Only one specimen of this sort was seen, the grip in this having been originally two inches in width. At the lower end the shaft passes imperceptibly into the blade.

The total length of the blade, exclusive of the terminal knob, is one foot to 15 inches, with a maximum width of 6 to 7 inches. The wings of the blade curve outward gradually from the shaft to the point of maximum width, which in a blade one foot long is slightly less than 11 inches from the upper end. From this point they curve inward sharply toward the base of the terminal knob. The thickness of the wings at the edges is about ⅛ inch, this thickness remaining uniform for the entire length of the blade. The center of the blade has a thickness of ¼ to ⅜ inch, gradually increasing toward the ends. The outer surface of the blade is convex, either smoothly rounded or with a slight longitudinal ridge along the center. The inner surface is concave, the center, at the point of greatest depth, being sometimes as much as ⅜ inch below the level of the wing edges.

The form of the terminal knob may be seen from Plate XLIII, *B*. The knob is connected with the blade by a short neck which curves upward and backward. The inner side of this neck bears a rather sharp longitudinal ridge which continues for a short distance up the blade. The outer surface is flat or bears a much lower longitudinal ridge which continues for a short

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MATTING AND BASKETRY

MATS

The twin arts of matting and basketry appear to have been less developed in the Marquesas than in any other part of tropical Polynesia and both have been nearly destroyed by European contact. No mats of the better sort are now manufactured and the processes employed are unknown to most of the natives. Only three materials appear to have been used for mats, ti leaves, coconut fronds, and the leaves of the pandanus. Mats made from ti leaves were small crude affairs, hardly deserving the name. They were used only to line and cover *me* pits. (See Pl. LXVI, *A*.) They were made as follows:

A quantity of the leaves were collected and the stems and heavy portion of the midrib removed, without breaking the inner surface of the leaf. These stemmed leaves were laid in bundles of three or four, the face of each leaf being against the back of the one below. These bundles were then placed side by side with a wide regular overlap, always from the same direction, and were pinned together with splints about two inches long made from the midrib of a coconut leaflet or from bamboo. Three of these splints were used to join each pair of bundles, one being placed in the middle and the other two near either end. In doing the work a long splint was used; a portion of the end of the splint was broken off each time and left as a pin. The resultant mat was as wide as the length of the leaves and could be extended indefinitely by pinning on new bundles.

Coconut mats are still regularly made in the Marquesas; the work is done by men and women indiscriminately. They are employed mainly as thatching for houses, to cover large earth oven and in ancient times they were used on beds, under the fine mats. The coconut mats are made as follows:

A coconut frond, usually that of a young tree, is split longitudinally and the midrib, to which the leaflets of either half are attached, is pared thin enough to be rather flexible. Alternate leaflets are then directed forward and backward and interwoven in a simple checkerwork. The outer edge of the mat is finished by braiding the tips of the leaflets together in a continuous longitudinal strip. The size of these mats naturally depends upon that of the frond from which they are made, ordinary specimens being 14 to 20 inches wide and 6 to 12 feet long. A common variation of this technique is to employ two half fronds placed side by side, the midribs being joined together by twisting a leaflet around both at intervals of one to two feet. The leaflets of both fronds are then interwoven to form a mat of single thickness like that just described. A still further variation consists in placing two half leaves together with the midribs at opposite edges and interweaving the leaflets in checkerwork. This last technique is rarely used at the present time.

The better Marquesan mats, used principally upon beds, were made from pandanus. These bed mats were as a rule long and comparatively narrow, being intended to cover the space between the two coconut logs. They were of two sorts, the distinction being apparently one of shape and use. The mats upon which the legs rested were called *moena*, those upon which the body rested *hakaua*, those for the head *p'ai p'ai*. (For shape and arrangements of these mats

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285 [352] (see p. 283.) According to Handy (personal correspondence) there was a kind of coarse mat, called *hupau*, which was used by poor people.

No pandanus mats have been made in the Marquesas for several years, and the information obtained in regard to the methods of manufacture was insufficient and sometimes contradictory.

The dry or half dead leaves appear to have been used. The base, midrib and thorny edges were cut away with a pearl shell scraper or knife of the sort used in scraping bark for tapa, leaving two long straight strips about two inches wide. According to one informant, these strips were then soaked in sea water for a few days, washed in fresh water, and dried in the sun. The extreme softness of some of the mats would seem to indicate that the dried strips were beaten or otherwise manipulated before weaving, but no information could be obtained on this point. Before weaving the broad prepared strips were split with a small stick like a needle into narrow sections which varied in width according to the degree of fineness of the contemplated mat. These strips were called *henu* (32). Marquesan mats appear to have been quite coarse as a rule, the width of the strips in all the specimens seen averaging three-eighths of an inch. The weaving was done entirely by women and the manufacture of some mats for special purposes was attended by ceremonial observances. According to one informant the work was done upon a sort of lap-board placed across the knees. Some mats were of single, others of double thickness, but the same methods were employed in making both, the double mats differing only in having each element made from two strips of the leaf laid one upon the other. The weave was a simple checkerwork, the warp and weft being indistinguishable and the strips running at an angle of forty-five degrees with the edges of the mat. Each element, as it reached the edge, was folded over and woven back into the mat at right angles to its former direction. A weft strip thus became, when turned and carried back, part of the warp. In one specimen, apparently a section cut from a large mat, the ends are finished by cutting off the ends of the warp strips and bending back and re-weaving these of the weft strips in the manner just described. The sides of this mat are finished by the first method. In a second specimen the edges are finished in a more complicated manner which gives an ornamental effect. (See Pl. LXVI, *B*.) The exact technique can not be ascertained without injuring the specimen.

285 531 Marquesan mats were rarely if every decorated with woven patterns, but one specimen in the Bishop Museum (Pl. LXVI, *C*) is embroidered in simple overlay with thin strips made from the upper surface of the pandanus leaf and dyed brick red. The decoration consists of six narrow strips, each two elements wide, two of which are placed at either end of the mat as a border while the other four are arranged longitudinally at equal intervals, the outermost strips being about four inches within the sides of the mat. According to Handy (personal [302] correspondence) the cuttings of women's hair were sometimes saved and woven in tufts around the edges of mats.

285 In view of the scanty material available for study it is quite possible that mats of finer grade than those described were manufactured in ancient times, but the general inferiority of Marquesan mats is mentioned by various early visitors. Petit Thouars (48, p. 348) says that the mats were coarser and less ornamental than those of the people living further west, and the wife of one of the first European missionaries sent to the group from Hawaii mentions, in a letter

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to friends, that she had gathered a few of the women together and was teaching them to weave coarse mats. This statement is so remarkable, implying as it does an ignorance of the art, that it is difficult to account for unless mat weaving, like certain other industries, had become more or less localized so that the valley in which the missionaries settled bought its mats ready made. 285

BASKETS

The manufacture of all but the simplest baskets had been discontinued in the Marquesas in 1920 and only two types of basket were remembered by the informants questioned. Both of these were made from coconut fronds. The simplest type *kooho* (Pl. LXVI, *D*) is still manufactured, and is made as follows: [824]

Four short sections of coconut midrib, to each of which three leaflets are attached, are placed two at either end of the proposed basket and the leaflets interwoven in checkerwork to form the broad, oval bottom. Four similar sections, bearing two or three leaflets each, are then placed in pairs above the first four and their leaflets interwoven with the ends of those forming the bottom, making the sides. Three of the bottom leaflets are left projecting beyond the basket at either end and these are braided and the braid carried up over the outside of the basket to the rim. The rim is finished like the edge of an ordinary mat. When the body of the basket is finished, a bunch of tips project from either end. The braids from the bottom are combined with these tips and the whole plaited into a broad flat cord. The cords from the two ends are tied together above the center of the basket to form a handle, and the receptacle is ready for use. Baskets of this sort can be made in a few minutes. They are used principally for carrying fruit.

The more elaborate type of coconut basket called *hakete* (Pl. LXVI, *E*) is no longer regularly manufactured; the specimen figured was made to order by an old woman who remembered the process:

Young fronds just beginning to unfold were used and the two sides of each leaflet were folded together before weaving so that the midrib lay along one edge of the strip. The basket was made as follows: The frond was taken and prepared as for mat weaving. Sections 3 to 5 feet long, depending on the size of the desired basket, were then cut from the corresponding portions of the two halves, and the leaflets of each section interwoven tightly at the base, each leaflet passing over two in the direction of its natural angle with the midrib. All the leaflets of each section thus ran in the same direction. The midribs of the two sections were then placed together in such a way that the leaflets of one ran at right angles to the leaflets of the other and were bent into a long oval, their ends being tied together with short pieces of bark string. This formed the rim of the basket. The leaflets of the two sections were then interwoven in a twilled pattern, over three and under three, those of one section forming the warp and those of the other section the weft. This weaving was continued down to the juncture of the bottom with the sides, where there was a narrow strip twilled over two and under two. The bottom, which was very narrow, was made in two thicknesses. The inner layer was formed by interweaving the warp strips of the two sides in a simple checkerwork, their tips being bent back and plaited together in a long strip beneath the checkerwork. The outer layer of the bottom was formed by bringing the weft strips of the two sides together along the middle of the bottom and there plaiting them into a flat braid. The braids from both the inner and outer layers were concealed between the two sections of the double bottom, but their tips projected upward, one at either end, on the inside of the basket. No handle was made, the basket being suspended by cords passed under the rim at either end. Baskets of this sort were used principally for carrying fish.

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285 Edge Partington (20, p. 46) figures a closely woven basket of coconut leaves of still a different type. It is oval in outline, with a flat bottom, vertical sides and a flat recurved top, making the opening considerably smaller in diameter than the body of the basket. No baskets of this sort are now in use and the form seems to have been forgotten.

[415] In the collection of the Peabody Museum at Cambridge there are two rather curious sacks from the Marquesas..

The material is split pandanus similar to that employed in mat weaving. The sacks are almost identical in size and construction and are rectangular, 14½ inches long and 11 inches deep. The form is that of an envelope with a triangular flap. The body of the sack is of double thickness, the outside layer being made of strips ¼ inch wide except for the last 3 inches below the top. The sack above this point, the flap, and the inner layer, are woven from much finer strips produced by splitting each of the ¼ inch strips in three. The technique is a simple checkerwork. A loop of twisted coconut fiber is attached to the center of the lip of the sack and passes up through a hole in the flap, protruding for 2 to 3 inches when the sack is closed. There is no information as to the use of these objects.

Jardin (33, p. 36) says that the natives wove coarse baskets from the flexible shoots of the *tutu* (Ceanothus asiatious), but gives no data to their form or the technique employed.

FANS

293 Marquesan fans were of two sorts, ordinary fans, which are still manufactured and used, and chiefs' fans, which were carried by persons of importance and were intended for show rather than use. The chiefs' fans are now obsolete, and no examples have been preserved in the group. They are fairly numerous in collections, however, and the type may be accurately described.

The coconut fans have a broad straight outer end and sides which are nearly parallel at the tip and curve inward smoothly at the base. All the specimens seen were more or less asymmetrical (Pl. LXVI, *F*), but this did not appear to be intentional. They are made as follows:

Young coconut leaflets are folded so that the midrib lies along one edge of the woven strip. The weaving is begun at the outer end, a flat band, twilled over two and under two and as long as the width of the proposed fan, being woven first. The twill in this band is longitudinal, and the whole is rarely more than seven elements wide. The direction of the twill is then changed to vertical, and the fan woven down to the upper end of the handle. To form the handle the two leaflets which are central at that point are crossed and carried down vertically, each succeeding pair being similarly detached from the weaving, crossed and braided in with those already detached until all have been included. The ends of these leaflets, which extend some distance below the fan, are then packed closely together, wrapped with bark string, and cut off squarely at the tips, the whole forming the handle.

The following description of chiefs' fans (Pl. LXVII, *A*, *B*) is based upon an examination of specimens in the possession of M. George La Garde of Papeete, and in various American museums. The weaving appears to have been uniform; the technique being as follows:

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HOUSE CONSTRUCTION AND FURNISHINGS: *A*, BACK REST, SIDE VIEW; *B*, BACK REST, REAR VIEW; *C*, OLD HOUSE AT ATUONA, HIVA OA; *D*, FURNISHINGS AND CONSTRUCTION OF END WALL; *E*, CLOSE VIEW OF BED; *F*, ORNAMENTAL LASHINGS OF REAR BEAM.

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MATS AND BASKETS: A, SMALL MAT OF YI LEAVES; B, PLAIN FABRARIS MAT; C, PANDANUS MAT EMBROIDERED IN RED; D, BASKET, KNOBO TYPE; E, BASKET, DAKUPA TYPE; F, PAN OF BASKET PLATE—TYPE IN USE IN 1920.

[end plate 27]

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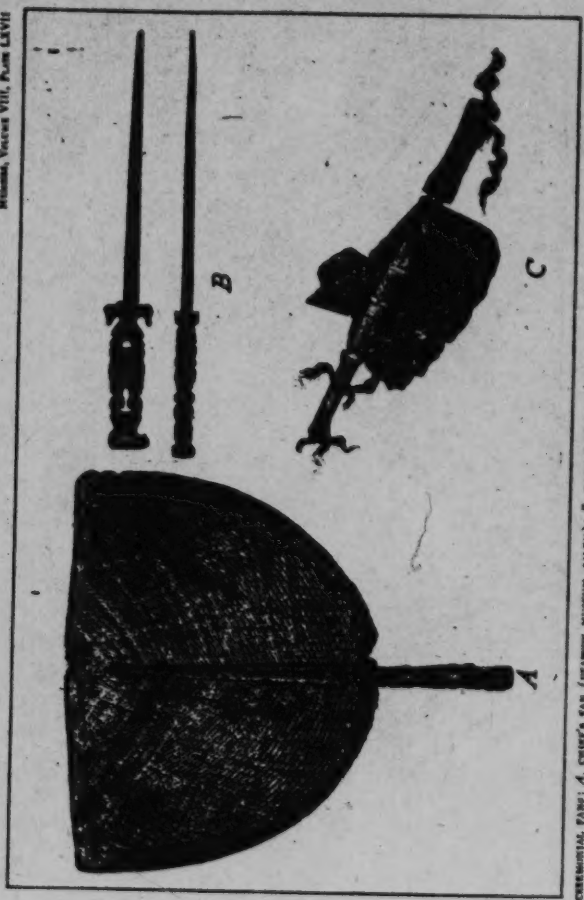

CEREMONIAL FANS: A, CHIEF'S FAN (PEABODY MUSEUM, SALEM); B, HANDLE OF CHIEF'S FAN, SIDE AND FRONT VIEWS; C, TORTOISE SHELL FAN USED BY ENSIGNBEES.

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[end plate 28]